



## Special Article

*Distributional Impact of Tax, Welfare and Public  
Service Pay Policies: Budget 2016 and Budgets  
2009-2016*

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T. Callan, B. Colgan, C. Logue, M. Savage  
and J.R. Walsh

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# Distributional Impact of Tax, Welfare and Public Service Pay Policies: Budget 2016 and Budgets 2009-2016

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Tim Callan, Brian Colgan, Caitríona Logue, Michael Savage, John R. Walsh<sup>1</sup>

## Abstract

This article analyses the distributive impact of Budget 2016 using SWITCH, the ESRI tax-benefit model. The model analyses budgetary impacts on the nationally representative sample of households provided by the CSO's Survey on Income and Living Conditions. The impact of budgetary policy is measured against a distributionally-neutral budget, indexed in line with expected wage growth of just over 2.3 per cent in 2016. A similar analysis is also conducted on the distributive impact of budgetary policy over the eight years from 2009 to 2016.

Compared with a wage-indexed benchmark, we find that Budget 2016 led to a modest increase – just under 0.7 per cent – in aggregate household disposable income (i.e. incomes including welfare payments and net of income tax, USC and PRSI). For the 20 per cent of households with the lowest incomes, on average Budget 2016 will have a similar impact to a neutral, wage-indexed budget. For most other income groups, changes in Budget 2016 will lead to gains of close to 0.5 per cent up to 1 per cent, as compared with a neutral or wage-indexed budget.

By contrast, budgets over the 2009 to 2016 period have given rise to substantial income losses at all income levels, as budget deficits were reduced. These may be termed 'policy-induced losses' to distinguish them from falls in income arising from unemployment, lower wages or falling self-employment incomes. For most income groups, these losses were between 7½ per cent and just over 10 per cent. The greatest policy-induced losses were for the top income group, at just over 14 per cent, and the lowest income group, at 12¾ per cent.

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<sup>1</sup> We thank CSO for access to SILC data on which the SWITCH tax-benefit model is based. We are grateful to Sean Lyons and Anne Pentecost for estimates of the distributional impact of indirect taxes. We thank anonymous referees for comments; any remaining errors or obscurities are the responsibility of the authors.

Analysis at family unit level reveals that policy-induced losses ranged between 9 and 11 per cent for most family types from the combined effects of Budgets 2009 to 2016. The greatest proportionate losses, close to 20 per cent, were for single unemployed people without children – mainly those affected by cuts in payment rates for the young unemployed. The lowest losses were for those in receipt of old age pensions, as pension payment rates were increased by Budgets 2009 and 2016.

## Introduction

In this article we examine the distributional impact of the main tax and welfare measures in Budget 2016, together with the increase in the National Minimum Wage and the expansion of the scheme providing free pre-school places. We also consider the combined impact of budgetary policies since Budget 2009, which marked the start of Ireland's fiscal adjustment in response to the economic crisis.

The analysis uses SWITCH, the ESRI tax-benefit model,<sup>2</sup> to ensure that we obtain a nationally representative picture based on SILC (Survey of Income and Living Conditions), the CSO's main survey of household income. The scale, depth and diversity of this survey allows it to provide an overall picture of the impact of the budget on Irish households, which cannot be gained from selected example cases. The areas covered by SWITCH, including income tax, PRSI, USC, property tax, welfare benefits and public service remuneration, account for the bulk of the impact of budgetary policy changes on households' cash incomes in recent years. Last year the model was also extended to take account of water charges and the water conservation grant. There are, however, some taxes (e.g. indirect taxes, which affect the purchasing power of cash incomes) which cannot at present be integrated fully within the modelling framework; for a number of these we extend the analysis using other evidence.<sup>3</sup>

We do not, in general, attempt to measure the impact of cuts in public services on households at different income levels.<sup>4</sup> While this is an important area, there is no agreed standard methodology for the attribution of benefits from public spending to households. Thus, there is no agreed international approach which can simply be applied to Ireland. In recent years the UK Treasury (HM Treasury, 2014) has begun to publish analyses which seek to distribute the value of public spending across the household income distribution. O'Dea and Preston (2012) raise some questions about the assumptions made and propose some alternative methods, but these methods have yet to be implemented.

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<sup>2</sup> See Callan et al. (2013a) for a full description of the model.

<sup>3</sup> The methods referred to deal with the introduction of a carbon tax and a later increase in its rate; changes to VAT; increases in the Deposit Interest Retention Tax (DIRT); restrictions on pension tax reliefs for high income earners; restrictions on tax relief for medical insurance premia; and increases in Capital Gains Tax (CGT). For further details see Callan et al. (2013b).

<sup>4</sup> The inclusion of a valuation for the pre-school place provided under the Early Childhood Care and Education (ECCE) scheme is an exception. This arose from the fact that ECCE partially replaced a cash payment (Early Childcare Supplement).

The results we obtain relate to the ‘cash’ or ‘first round’ effects of policy changes, before any adjustments in individual behaviour such as changes in employment status or hours of work. This is by far the most common approach internationally (for example, this is the approach taken by the UK’s Institute for Fiscal Studies in its post-budget assessment, and by the Brookings/Urban Institute’s Tax Policy Center in the US in assessing new policy proposals). In other work (e.g. Savage et al., 2015a) we have examined the impact of tax and welfare changes on financial incentives to work such as marginal tax rates and replacement rates. The extent and nature of response to these financial incentives has also been examined in Layte and Callan (2001) and in Callan et al. (2009). The findings of such research need also to be taken into account when policy is trying to balance the sometimes conflicting objectives of equity and efficiency.

In this article, our focus is on impacts of budgetary policy at different income levels. Elsewhere (Savage et al., 2015b) we examine the overall evolution of the distribution of income and of risks of poverty. In future work we will update this using the results of the most recent Survey on Income and Living Conditions (CSO, 2015), which shows broad stability in income distribution developments between 2013 and 2014.

### **Measuring the Distributional Impact of Policy**

What has been the overall impact of Budget 2016 at different income levels and on different family types? How has the sequence of budgets since October 2008 affected households at different income levels? Analysis based on a large-scale nationally representative sample of households is essential in answering such questions. Calculations for selected example households, such as a one-earner couple with two children, cannot give an accurate picture of the impact of the budget for the population as a whole. This requires calculations for large numbers of real households in a nationally representative sample. The ESRI tax-benefit model (SWITCH) allows us to do this: it estimates the impact of direct tax and welfare changes using anonymised data from the CSO’s SILC.

The impact of policy change must be measured against an alternative specifying what would happen if the policy change did not take place (a ‘counterfactual’ policy). In the construction of budgets, the practice in Ireland has been to construct an ‘opening budget’ against which changes are measured. For tax and welfare Ireland’s conventional opening budget simply freezes tax rates, credits and welfare payments at their existing levels, whereas the UK and the US have adopted differing forms of indexation with respect to prices and/or wages (see Appendix 1 for further details). While the frozen benchmark is useful in

accounting terms, it would be highly misleading in an analysis of distributional impact.<sup>5</sup> In normal times, with nominal wages, prices and real wages all showing positive growth, implementing the conventional opening budget would lead to real income *losses* for those dependent on welfare, while further up the income distribution incomes would *rise* (Callan et al. (2001), Bargain and Callan (2008)).<sup>6</sup> Furthermore, using the opening budget as a basis to measure policy impact would mean that measured policy impact would depend on government's definition of this default policy – something which varies across countries, and can change over time.

The alternative used here is a policy which indexes both tax and welfare parameters with respect to the expected growth or decline in wages. This ensures that average tax rates are held constant (i.e. no fiscal drag); and leads to approximately equal growth (or decline) in income across different income groups (Callan et al., 2001). It should be clear that this is designed to provide a 'distributionally neutral' benchmark, and is not intended as a policy recommendation. There are many reasons why it may be desirable to depart from this benchmark; but having a distributionally neutral benchmark, independent of the default position chosen by government, is essential in examining the distributional impact of policy changes.

We use forecasts of wage growth (or decline) to implement this approach on a prospective basis. Results examining the impact of Budget 2016 are based on forecast wage growth of 2.35 per cent – an average of the forecast wage growth from the current *Quarterly Economic Commentary* (Winter 2015; 2.3 per cent) and the Central Bank's *Quarterly Bulletin* (Central Bank of Ireland, 2015; 2.4 per cent). Similarly, for income growth between 2008 and 2016 we combine these forecast figures with the results on wage growth from the CSO's Earnings, Hours and Employment Costs Survey for the available years (2009 to 2014). Periods of falling wages during the recession mean that growth for the whole period (2009 to 2016) comes to 1.7 per cent, less than the growth in 2016.

Results shown are at the household level unless otherwise specified and are based on household disposable income (after taxes and benefits), adjusted for

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<sup>5</sup> For a more detailed exposition, see Callan et al. (2001).

<sup>6</sup> When wages are falling, the conventional benchmark would give rise to income gains for welfare recipients and income losses for those in employment.

household size and composition, i.e. income per adult equivalent or 'equivalised income'.<sup>7</sup>

## **Budget 2016**

A wide range of taxation and welfare measures are directly included in our model-based analysis, including:

- The reduction of the rates of USC, the increase of the USC exemption limit, and the increase of the 3 per cent USC threshold to €18,668;
- The €5 per month increase in the standardised child benefit payment to €140;
- A Christmas bonus of 75 per cent of the weekly payment for people in receipt of long-term social welfare payments, as against a 25 per cent bonus in December 2014;
- The introduction of the new Earned Income Credit of €550 for self-employed persons not qualifying for the PAYE Credit;
- The introduction of a new tapered PRSI credit;
- Increases in the Home Carer's income threshold, in Family Income Supplement income thresholds, and Fuel Allowance;
- Increases in the personal rates and increases for qualified adults of the State Pension, and related payments, including carers and widow(er)s payments;
- The restoration of the Respite Care Grant (renamed the Carer's Support Grant) to €1,700;
- Changes to the Jobseeker's Transitional payment means-test.

Our analysis also includes an estimate of the impact of the increase in the National Minimum Wage (from €8.65 per hour to €9.15 per hour) on the incomes of low wage workers.<sup>8</sup> It should be noted that while the increase in income for such workers is taken into account, there is no mechanism at present for

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<sup>7</sup> This adjusts income to take account of household size. The scale used is the same as that used by the CSO in national statistics relating to poverty and income distribution in Ireland, i.e. 1 for the first adult, 0.66 for subsequent adults and 0.33 for children aged 14 or under.

<sup>8</sup> In principle, the counterfactual minimum wage used here could also be indexed in line with wage growth. However, at present, our calculations are based on an increase of 50 cents per hour; with wage indexation this figure would be 30 cents per hour. As the impacts of the 50 cent per hour increase are already small, this will make little difference to the overall results.



estimating the potential impact on employers or owners of businesses which will have to pay higher wages.<sup>9</sup>

Estimates of the impact of the extension of the Early Childhood Care and Education (ECCE) Scheme are also included. While this does not represent a cash payment, we attribute a value to parents based on the cost of provision of the service. While this is a commonly used valuation approach, it is far from being perfect – for a discussion of the difficulties and some alternative approaches, see O’Dea and Preston (2012). A similar approach could be adopted to the extension of free GP care to children, and the development of a framework which would allow such an approach is underway.

Changes to public sector pay in 2016 take quite a complex form. There are increases of 2.5 per cent for those on annualised salaries up to €24,000, with a smaller increase of 1 per cent for those on salaries above that level and up to €31,000. There are also reductions in the Pension Related Deduction (PRD) which apply more generally, and imply a fixed or flat-rate element to the effective pay increase for most employees. In deciding how best to treat such changes in the analysis, we need to recall that if the overall budget were to be indexed in line with private sector wage growth, then public sector pay changes would also be increased in line with the broad developments in private sector pay.

During the recession, public sector pay was reduced sharply relative to private sector pay,<sup>10</sup> and with a design which was intended to obtain particular distributional consequences. It was for this reason that it was included in our analysis of the policy response to the recession. The changes for 2016 are designed around an overall envelope in which public sector pay is likely to rise by no more than the forecast rise in overall earnings of just above 2 per cent. This would suggest that such pay increases belong more in the wage-indexed budget than as a special budgetary measure. For this reason, in our main analysis, we do not take account of the specific public sector pay measures for 2016. It could be argued, however, that the particular structure of public sector pay changes, with a focus on a flat rate element through the PRD, and on special increases at low pay rates has a distributional objective. As a result, the distributional consequences of these pay changes should be examined. Appendix 2, therefore, illustrates the sensitivity of the results to the inclusion or exclusion of public sector pay changes from the analysis.

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<sup>9</sup> Appendix 2 allows examination of results with and without the National Minimum Wage increase.

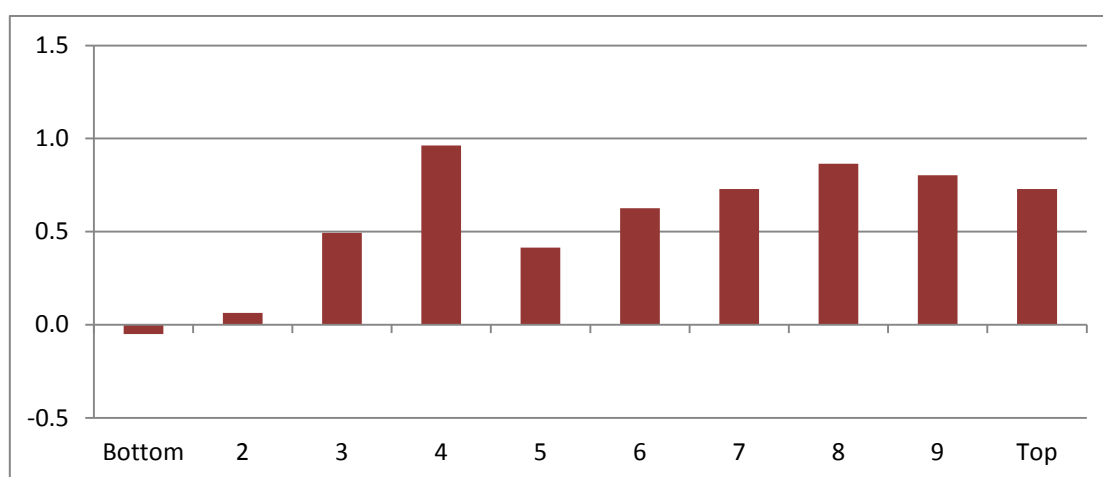
<sup>10</sup> Public sector pay had risen relative to private sector pay in previous years, as identified by Kelly et al. (2009).

Some changes are too complex to be included in the model at this stage. Chief among these are:

- Changes to excise duties on cigarettes and the rate of motor tax;
- The Back to Work Family Dividend, whereby long-term unemployed people may retain the child-related portion of their welfare payment; in full for one year, and 50 per cent for a second year;
- The Housing Assistance Payment, and additional resources allocated to the Rental Accommodation Scheme (RAS);
- The increase in the Capital Acquisitions Tax threshold;
- The introduction of Paternity Benefit.

Overall, the SWITCH model provides excellent coverage of the main policy changes in Budget 2016: the items included in the SWITCH analysis account for some €865 million of the tax and social insurance changes in the budget, representing over 90 per cent of the cost of all tax changes in Budget 2016. On the welfare side, SWITCH coverage is close to €400 million or almost 100 per cent of the cost of the welfare changes. Of those items not covered, some will have a positive impact on lower income groups (e.g. the Back to Work Family Dividend), but others will have an unfavourable impact (e.g. excise duties on tobacco).

**FIGURE 1** Impact of Budget 2016 – Percentage Change in Disposable Income by Income Decile Relative to Wage-Indexed Budget



*Source:* Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2015 and including changes to USC, income tax and welfare measures specified in the text, along with the impact of changes in the National Minimum Wage and expansion of the Early Childhood Care and Education scheme, valued at the cost of provision. Each income group contains one-tenth of all households, ranked from lowest to highest incomes. Budgetary impacts are assessed relative to a neutral budget with tax bands, tax credits and welfare payments increased in line with expected wage growth of 2.35 per cent.

Figure 1 shows the impact of Budget 2016, relative to a neutral, wage-indexed budget, across ten equally sized income groups (deciles) ranked from the lowest to the highest incomes, after adjustment for household size.<sup>11</sup> Budget 2016, compared with a neutral budget, indexing tax credits and welfare payments in line with expected wage growth of 2.35 per cent, has little impact on the incomes of the two deciles with lowest incomes. Looked at another way, Budget 2016 delivers similar income to the lowest income quintile as a wage-indexed budget: a substantial part of this came through the Christmas bonus rather than an increase in weekly payment rates. For other income deciles, Budget 2016 raises the incomes by between half and one per cent above the level a neutral budget would provide. The small scale of this overall impact contrasts with perceptions of Budget 2016 as a major ‘giveaway’. This is because, with wage growth of close to 2½ per cent, the cost of a neutrality – keeping average tax rates constant, and welfare payments growing in line with wages – is itself substantial. While the reduction in USC has attracted most attention, the freezing of income tax credits and bands in the face of rising incomes will, through ‘fiscal drag’, lead to a higher average income tax rate, offsetting a part of the USC reduction.

In order to understand the impact of changes in the national minimum wage (NMW), one must take account of the rather limited overlap between low pay and household poverty. This is a feature common to many countries, and has been confirmed in the Irish context by a number of studies.<sup>12</sup> Most households in poverty do not contain an employee; and of those which do, most do not contain a minimum wage employee.<sup>13</sup> Instead, low paid employees are found in a range of household situations: some are adult children living in households where the earnings of parents ensure that the household is not in poverty, others are second earners, and the earnings of primary and secondary earners are sufficient to bring the household above the poverty line. Employees in poor households are more often earning wage rates above the minimum, but fall below the poverty line because of the number of people depending on that income, or part-time working at a wage above the minimum. This is the group which is targeted by measures such as the Family Income Supplement and the Back to Work Family Dividend.

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<sup>11</sup> For details of the method used to adjust incomes for household size and composition, see footnote 7.

<sup>12</sup> For example, the initial study by Nolan (1993), and later studies related to the introduction of the minimum wage. A similar pattern can be found in the work of Collins (2015).

<sup>13</sup> Conversely, results in Collins (2015) indicate that 92 per cent of minimum wage employees are not in households at risk of poverty households (i.e. with incomes below 60 per cent of median household income per adult equivalent).

Given these structural features, it is not surprising that the social impact assessment of Budget 2016 (Department of Social Protection, 2015) finds that the increase in the National Minimum Wage leads to only a small increase in the average income of the bottom quintile of households. Higher increases are found for quintiles 2, 3 and 4, with again a more limited impact on the top quintile. These patterns merit further investigation in the context of ongoing debate about the setting and structuring of the National Minimum Wage.

One other feature of Budget 2016 has attracted less attention, but is important from the point of view of structural reform, is the postponement of revaluations of residential properties for property tax purposes for a period of three years; this could lead to significant difficulties in the future. The IMF (2015) states that ‘maintaining timely property revaluations for revenue purposes would cement sustainability of the revenue base.’ This is because property taxes work best when there is regular updating of the valuation base. When valuations become outdated, disparities often emerge which bring the tax into disrepute – this was one of the factors which led to the demise of household rates. Pressure to defer revaluation is common: England has deferred revaluation for its Council Tax for more than 20 years. In this context, the decision to freeze property tax until 2019 is a serious concern.

### **Budgets 2009-2016**

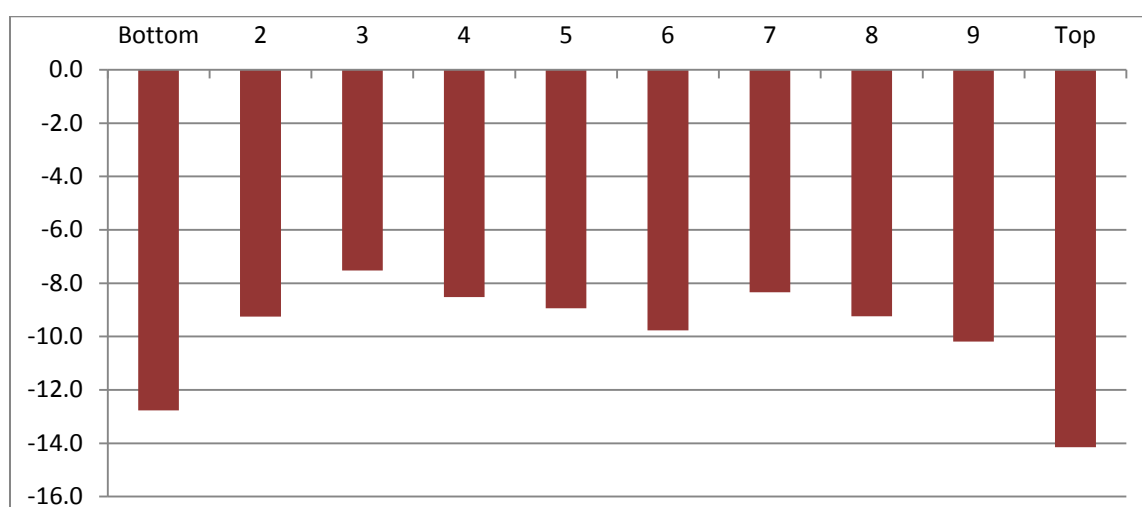
We now turn to the cumulative impact of the longer-run adjustment in budgetary policy, from the initial Budget 2009 (October 2008) up to and including Budget 2016. How have the changes implemented since the onset of the recession affected those at differing income levels? This analysis includes budgetary policy changes over an eight-year period, along with such measures as reductions in public sector pay and the introduction of water charges. Specifically, the policy changes analysed include all of those specified earlier for Budget 2016, along with:

- the main changes to income tax, including cuts to income tax credits and the width of the standard rate band;
- the introduction of Universal Social Charge and subsequent revisions;
- elimination of the PRSI ceiling;
- the net changes in welfare payment rates over the period, with pension payment rates retaining the increase awarded in October 2008, and working-age payments ultimately reduced below their 2008 levels;
- net reductions in Child Benefit payment rates, with cuts in earlier years only partly offset by increases in 2015 and 2016;

- reductions in Jobseeker’s Allowance for the young unemployed;
- the impact of the public sector pension levy (Pension Related Deduction, PRD);
- explicit cuts in public service pay in 2010 and in 2013;
- reductions in public service pensions;
- the introduction of the Local Property Tax;
- abolition of the Christmas Bonus in 2009, and its partial restoration in 2015 and 2016;
- cutbacks in certain elements of the Household Benefits Package;
- the impact of water charges, net of the water conservation grant.<sup>14</sup>

We augment the standard SWITCH model with estimates from other sources<sup>15</sup> of the distributional impact of a number of other policy changes.

**FIGURE 2** Impact of Budgetary Policy 2009-2016 – Percentage Change in Disposable Income by Income Decile



*Source:* Authors’ analysis using SWITCH, the ESRI tax-benefit model, at December 2015 incorporating the main changes in direct tax, welfare and public service pay/pensions, the introduction of water charges and a water conservation payment, an increased National Minimum Wage and expansion of ECCE; augmented by results on carbon tax and VAT, DIRT, specific Budget 2014 restrictions of tax reliefs for pension contributions and medical insurance premia, and Capital Gains Tax as described in Callan et al. (2013b).

<sup>14</sup> The rationale for this approach is given in Keane et al. (2014): ‘While water charges are not technically a “budgetary measure” it is our view that they need to be taken into account when considering the impact of Budget 2015. Up to now, water services have been financed predominantly from taxation. The introduction of user charges for water can be seen as replacing some of the tax financing. From the point of view of an individual household, it will see a net benefit if its tax bill falls by more than the new water charge, and a net cost if the water charge is greater than a tax reduction.’

<sup>15</sup> See footnote 3. Details of the methods can be found in Callan et al. (2013b).

The overall scale of the impact of austerity policies is determined by macro-level decisions regarding the size of tax increases and the extent of the reduction in welfare payments and public service pay. The distribution of these income losses over income groups depends on the detail of budgetary decisions regarding tax structures, welfare payment rates and decisions on the structure of public service pay cuts. Figure 2 summarises how the adjustment is spread over income groups (deciles) ranked from poorest to richest, taking into account these detailed tax, welfare and public service pay decisions.

The highest losses were for the top decile, which is estimated as having lost 14¼ per cent of its income due to the policy changes examined here. The bottom decile is estimated as having policy-induced losses of 12¼ per cent. The lowest losses (7½ per cent) are for the third decile, which includes a higher than average representation of pensioner households. Losses for other deciles are in a relatively narrow range, between 8.3 and 10.2 per cent.

The comments we made on the pattern which emerged last year, for the 2009-2015 period, remain apposite: the results for Budgets 2009 to 2015 cannot be characterised in terms of simple patterns of progressivity or regressivity. Over a substantial range the pattern is broadly proportional, but this does not extend to whole income distribution. The greatest policy-induced losses have been at the top of the income distribution, and the next greatest losses at the bottom. Only the third decile had a significantly lower loss (under 8 per cent) than others.

### **Impact by Family Type**

The preceding analyses have examined the impact of the current budget, Budget 2016, and the impact of all budgets 2009-2016 across the income distribution. Here we examine how different family types have been affected by budgetary policy changes. The analysis is conducted at the level of what is termed a 'tax unit', i.e. an individual or couple, together with dependent children, if any. Young adults including third-level students are treated as independent tax units.<sup>16</sup>

Table 1 shows gains of 1.3 per cent for two-earner couples with children; 1 per cent for employed lone parents; and 0.8 to 0.9 per cent for single employees

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<sup>16</sup> For this analysis, only the core modelled elements can be taken into account; it is not possible to cover the additional elements such as VAT changes, DIRT etc. in this analysis.

without children (about one in three of all tax units), two-earner couples without children, and single earner couples with children. There are smaller gains for one-earner couples without children (0.4 per cent). Retired persons (both singles and couples) and non-earning lone parents would obtain under Budget 2016 a similar outcome to that under a wage-indexed budget. Some categories, however, fare less well than under a wage-indexed budget, notably single unemployed persons without children, unemployed couples, and tax units not elsewhere classified (a category which includes those with a disability).

**TABLE 1** Impact of Budgetary Policy 2009-2016 – Percentage Change in Disposable Income by Family Type

	Budget 2016	Budgets 2009-2016	Proportion of Families
	% change	% change	%
Single Retired Tax Unit	0.1	-4.7	11
Retired Couple	0.0	-5.7	8
Single Employed without Children	0.8	-6.9	34
All Other Tax Units	-1.0	-8.6	9
Single Earner Couple without Children	0.4	-9.5	5
Employed Lone Parent	1.0	-9.8	5
Dual Earner Couple without Children	0.9	-9.8	9
Dual Earner Couple with Children	1.3	-10.1	9
Single Earner Couple with Children	0.8	-10.7	9
Non-Earning Lone Parent	0.0	-10.7	1
Unemployed Couple	-0.5	-11.2	1
Single Unemployed without Children	-1.4	-22.3	3

Source: Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2015 incorporating for 2016 the main changes in direct tax, welfare, public service pay/pensions, water charges, the National Minimum Wage and the Early Childhood Care and Education (ECCE) Scheme.

In respect of Budgets 2009-2016, losses are larger and more widespread and there are no gains. Single unemployed people without children have experienced by far the largest losses (more than 22 per cent): this reflects the cuts to jobseeker payments for the young unemployed in particular. Most family types saw losses of between 8 and 11 per cent. The contributing factors to the losses vary by income level. At the lowest income levels, reductions in welfare payment rates, property tax and water charges play significant roles. At the highest income levels, major contributory factors are income-related taxes (income tax and USC) and cuts in public sector pay. The lowest losses, of between 5 and 6 per cent, were experienced by retired tax units, both single and couples. This reflects the protection afforded to pension payments throughout crisis budgets.

## Conclusion

Our analysis provides a nationally representative picture of the impact of the main tax and welfare changes in Budget 2016, taking into account the increase in the National Minimum Wage and the value (at cost of provision) of additional pre-schooling. The analysis is undertaken relative to a distributionally neutral budget, implemented via indexation of tax and welfare parameters in line with expected wage growth.

Compared with a wage-indexed benchmark, we find that Budget 2016 led to a modest increase – just under 0.7 per cent – in aggregate household disposable income (i.e. incomes including welfare payments and net of income tax, USC and PRSI). For the 20 per cent of households with the lowest incomes, on average Budget 2016 will have a similar impact to a neutral, wage-indexed budget. For most other income groups, changes in Budget 2016 will lead to gains of close to 0.5 per cent up to 1 per cent, as compared with a neutral or wage-indexed budget.

By contrast, budgets over the 2009 to 2016 period have given rise to substantial income losses at all income levels, as budget deficits were reduced. These may be termed ‘policy-induced losses’ to distinguish them from falls in income arising from unemployment, lower wages or falling self-employment incomes. For most income groups, these losses were between 7½ per cent and just over 10 per cent. The greatest policy-induced losses were for the top income group, at just over 14 per cent, and the lowest income group, at 12¾ per cent.

Analysis at family unit level reveals that the greatest losses imposed by Budgets 2009 to 2016 were for single unemployed people, while the lowest losses were for pensioners. This reflects the substantial cuts in welfare payment rates for the young unemployed in particular, and the fact that pension payment rates, unlike working-age payment rates, were increased by Budgets 2009 and 2016.



## Appendix 1 On the Need for a Distributionally Neutral Benchmark

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We noted that budgetary conventions governing the adjustment (or non-adjustment) of tax and benefit parameters can vary across countries and over time. Experiences in the UK, the US and Ireland illustrate this point. Each of these countries experienced high inflation during the 1970s. At that point, the default option for each country was that basic income tax parameters remained unchanged ('frozen') in nominal terms unless explicitly changed. During this time, failures to adjust nominal values of income tax parameters in line with earnings growth led to increases in average tax rates as higher incomes moved more income into brackets taxed at higher rates – a phenomenon known as 'fiscal drag' or 'bracket creep'.

### UK Experience

In the UK, the system was amended by the 1977 Finance Act which made uprating of income tax allowances in line with the Retail Prices Index the new default option.<sup>17</sup> Currently Pope et al. (2015) note that:

*Most bands and allowances are increased at the start (in April) of every tax year in line with statutory indexation provisions, unless Parliament intervenes. These increases are announced at the time of the annual Budget and are in line with the percentage increase in the consumer price index (CPI) in the year to the previous September. The additional-rate limit and the £100,000 threshold at which the personal allowance starts to be withdrawn are frozen in nominal terms each year unless Parliament intervenes.*

On the benefit side, Hood and Oakley (2014) summarise the situation as follows:

*Benefits and tax credits are usually uprated at the start of every financial year in line with prices. From 2011-2012, almost all benefits, tax credits and public service pensions have been indexed to the consumer prices index (CPI).... An important exception to the CPI-uprating of benefits is the 'triple-lock' guarantee for the state pension: since 2012-2013, it has been increased by the highest of earnings growth, CPI price inflation and 2.5 per cent. Thus, for 2014-2015, the state pension increased by CPI inflation (2.7 per cent) – the highest of these benchmarks.*

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<sup>17</sup> 'An Act of Parliament is required in order to increase income tax allowances by less than the increase in RPI, which means that the default option is that they be uprated in line with RPI.' Alt et al., 2012.

*By default, pension credit rates are uprated in line with earnings growth, but in recent years they have seen the same cash increase as the basic state pension, which has been more generous than earnings indexation.*

*The majority of benefits and tax credits for working-age people are to be increased by 1 per cent for three years from 2013-2014 (disability benefits and the disability elements of other benefits and tax credits such as child tax credit are excluded).*

Thus, UK experience includes the use of both price indexation and earnings indexation, and in more recent years a 'triple lock' involving the minimum of price inflation, earnings growth and a pre-specified fixed minimum rate. This mechanism would involve a 'ratchet effect' whereby pensions would rise faster than both prices and earnings in the medium to long run. This has been strongly criticised by Johnson (2015) who notes that

*At some point it will prove to be prohibitively expensive; the Office for Budget Responsibility estimates that it will add well over one per cent of national income to pension spending by the middle of this century relative to the cost of earnings indexation. It also adds a bizarre degree of randomness into the future level of state pensions which will depend not on overall increases in prices or earnings but on the timing of those rises.*

The UK experience shows how the default policy has changed substantially over the years, with systems containing the following elements in operation at different times:

- No automatic indexation, and all changes being regarded as discretionary;
- Widespread indexation of taxes and benefits to the Retail Price Index;
- Differential indexation of pension-related benefits and credits and working-age payments, with pension-related benefits linked to earnings or to the minimum of earnings, prices and a fixed minimum rate of increase;
- A shift from the use of the Retail Price Index to the Consumer Price Index.

## **US Experience**

In the US, the Economic Recovery Tax Act of 1981 (ERTA81), introduced indexation of individual income tax parameters which became effective in 1985 (Bargain et al., 2014). Most US states also adopt some form of indexation. The Bureau of Labor Statistics ([www.bls.gov/dolfaq/bls\\_ques1.htm](http://www.bls.gov/dolfaq/bls_ques1.htm)) notes that the

Consumer Price Index is used to provide automatic adjustments of payments to almost 50 million Social Security beneficiaries and 20 million food stamp recipients.

## **Ireland**

There has been little by way of explicit and automatic indexation of the Irish income tax system along the lines seen in the UK and the US. Adjustment of the money value of most tax and welfare parameters has remained a matter for discretionary decisions within each budget. For a period, there was provision in the capital gains tax system for indexation of the costs of acquisition of capital assets, when calculating capital gains; these indexation provisions have, however, been abolished. One other area where the opening budget allowed for some adjustment of a nominal parameter was with respect to the former income ceiling on PRSI contributions. This tended to rise broadly in line with earnings, but as the limit has been abolished, this is no longer a feature.

Official analyses of the distributional impact of Irish budgets have focused on impacts measured against a scenario in which tax and welfare parameters are frozen in nominal terms. The recent Social Impact Assessment of Budget 2015 (Department of Social Protection, 2015) continues in this tradition, now using the SWITCH model to implement this framework.

## **Implications**

Money-valued tax and welfare parameters may, by default, remain unchanged or be adjusted in line with a measure of price inflation or wage growth. Government choices on this issue vary across countries and over time. If the impact of policy is measured relative to the default policy chosen by government the outcomes are sensitive to government's choice of the default policy. A standard which is independent of such government choices is desirable. The 'distributionally neutral' benchmark described in the text provides a measure of policy impact which is independent of government's choice of default policy, and has a number of desirable features. It is macroeconomically neutral – average tax rates are constant from year to year – and it is distributionally neutral – average incomes rise by the same proportion at different income levels, so that income shares remain constant.

## Appendix 2 Sensitivity of Results to Alternative Treatments of Minimum Wage and Public Sector Pay Changes

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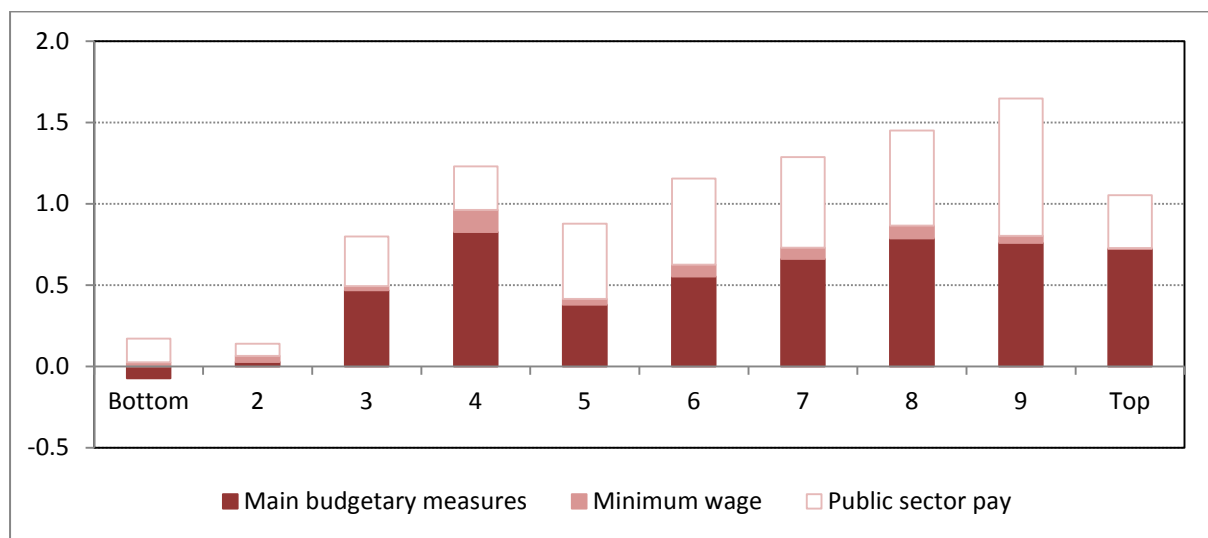
In our preferred approach, we regarded the 2016 public sector pay adjustments as approximately equal to private sector wage growth, and therefore forming part of the baseline wage-indexed budget rather than a discretionary or special measure. It could be argued, however, that the nature of the public sector wage adjustments – close to a flat rate money amount from PRD, and explicit percentage increases only for the lowest pay scales – means that they should be examined as a distinct policy measure. In Figure A.1, we examine how these public sector pay changes would alter the picture provided earlier in Figure 1.

Similarly, our preferred approach included the impact of an increase in the National Minimum Wage; while some would argue that as this is paid for by employers, it should not be included on a par with tax and welfare adjustments. Figure A.1 again helps to identify the impact of including or excluding the National Minimum Wage change in the modelling approach.

Figure A.1 shows that the impact of the 50 cent increase in the hourly National Minimum Wage is quite limited in scale. As a result, analysis excluding the NMW impact would make little difference to the conclusions in the main text. It is noticeable that the NMW leads to small impacts spread quite widely across the household income distribution – the reasons for this are discussed in the main text.

Figure A.1 shows that the public sector wage changes have a somewhat greater impact. However, these changes tend to lead to a greater divergence between income growth for middle and most upper income groups and the quintile of households with lowest incomes. The explicit shaping of public sector wage changes towards lower incomes is reflected in the limitation of such gains in the top decile, but does not result in a greater gain for those in the bottom quintile of the household income distribution.

**FIGURE A.1** Impact of Budget 2016 – Percentage Change in Disposable Income by Income Decile Relative to Wage-Indexed Budget: Sensitivity Analysis to Alternative Treatments of Changes in the National Minimum Wage and Public Sector Pay



*Source:* Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2015 and including changes to USC, income tax and welfare measures specified in the text, along with the impact of changes in the National Minimum Wage and expansion of the Early Childhood Care and Education scheme, valued at the cost of provision. Each income group contains one-tenth of all households, ranked from lowest to highest incomes. Budgetary impacts are assessed relative to a neutral budget with tax bands, tax credits and welfare payments increased in line with expected wage growth of 2.35 per cent.

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